

## 科學與技術 -- 科學與技術的未來

—— 科學與技術的未來

科學與技術 Nature Magazine 的 AlphaGo Zero paper 科學與技術的未來 [1]

科學與技術的未來

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科學與技術的未來

科學與技術的未來

科學與技術的未來 talent pool 科學與技術的未來

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科學與技術 Karl Raimund Popper 科學與技術的未來

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科學與技術的未來 STEM (science, technology, engineering and mathematics) 科學與技術的未來

科學與技術的未來

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科學與技術的未來

科學與技術的未來 “科學與技術” 科學與技術的未來

AlphaGo Zero AlphaGo Master  
AlphaGo Master superhuman AlphaGo Master 60



Turing Machine      Turing Machine      Geoffrey Hinton      Turing Machine      Alan Turing     

Dialogue Concerning the Two Chief Word Systems [12]

The Sceptical of Chemist

On the Origin of Species

[13]

## Leukotomy    BRIAN Initiative

Leukotomy

1 personalities    mental diseases    personalities    BRAIN Initiative project

2 leukotomy    Leukotomy    BRAIN Initiative    AlphaGo

3 personality    intelligence    Walter Freeman    personality    intelligence    [14]

BRAIN Initiative project    NIH    BRAIN 2025 Report    “there is general agreement that types can be defined provisionally by invariant and generally intrinsic properties”    invariant    agreement    insights    “envision an integrated, systematic census of neuronal and glial cell types”    dynamic brain mapping    “Link brain activity to behavior”    “Produce conceptual foundations for understanding the biological basis of mental processes”    mental processes    behavior

BRAIN Initiative project    personality    intelligence    brain mapping    personality    intelligence    hidden assumptions

personality intelligence

BRAIN Initiative project brain mapping mental diseases personality intelligence leukotomy

leukotomy AlphaGo

personality intelligence mental diseases

BRAIN Initiative brain mapping human level intelligence personalities intelligence mental diseases BRAIN Initiative neurosciences AlphaGo generic human intelligence AlphaGo neurosciences [15]

AlphaGo Master AlphaGo Zero AlphaGo AlphaGo Master AlphaGo

AlphaGo

Technological Singularity BRAIN Initiative project Technological Singularity baseless

AlphaGo Zero achieved superhuman performance Demis Hassabis AlphaGo

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[1]

[2] Cracking Go Deep Blue AlphaGo AlphaGo

[3] <http://www.alphago-games.com/> AlphaGo Zero AlphaGo Zero

[4]

AlphaGo 围棋人工智能系统，由 Google DeepMind 开发，于 2016 年 3 月 9 日在首尔举行的世界围棋锦标赛上，以 4:1 的比分战胜了世界冠军李世石，成为第一个在围棋领域击败人类的计算机程序。

Google/Deepmind AlphaGo

Deepmind Alpha  
 Nature Magazine Alpha

[illegible]

[7] <http://www.alphago-games.com/> Full Strength of AlphaGo Zero, i.e. Final Form 40 Blocks 20 Blocks Not Full Strength of AlphaGo Zero AlphaGo Zero superhuman

[8] 

[9] 2012 [Show, don't tell](#) [show](#) [Socratic method](#) [tell and discuss](#)

Ideas are cheap

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[10] #####  
#####  
#####  
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AlphaGo 2016

[11] AlphaGo Master  
AlphaGo  
AlphaGo  
AlphaGo

[12] Dialogue Concerning the Two Chief Word Systems 对话篇 Socratic Method  
苏格拉底方法

AlphaGo

[illegible]

[13] BRAIN Initiative project <https://www.braintrust.org/> **BRIAN Initiative**

[14] [DeepMind](#) intelligence [Demis Hassabis](#) [AlphaGo](#) [Google](#) [Google](#) intelligence [Google](#)

[15] <https://www.youtube.com/watch?v=J0130333330>  
<https://www.youtube.com/watch?v=J0130333330> AlphaGo <https://www.youtube.com/watch?v=J0130333330>